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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,824	05/15/2006	Christophe Colignon	PSA0313828	7288

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NICOLAS E. SECKEL
Patent Attorney
1250 Connecticut Avenue, NW Suite 700
WASHINGTON, DC 20036

EXAMINER	
NGUYEN, TU MINH	

ART UNIT	PAPER NUMBER
3748	

NOTIFICATION DATE	DELIVERY MODE
08/05/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@seckelip.com

Office Action Summary	Application No.	Applicant(s)	
	10/595,824	COLIGNON, CHRISTOPHE	
	Examiner	Art Unit	
	TU M. NGUYEN	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-14 and 16-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-14 and 16-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. An Applicant's Request for Continued Examination (RCE) filed on June 25, 2010 has been entered. Per instruction from the RCE, an enclosed Applicant's Amendment has been entered. Claims 7 and 15 have been canceled; claims 1, 8, 9, and 16 have been amended; and claims 21-22 have been added. Overall, claims 1-6, 8-14, and 16-22 are pending in this application.

Drawings

2. The formal drawings filed on May 12, 2006 have been approved for entry.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4, 6, 8-12, 14, 16-18, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki (U.S. Patent 6,490,857) in view of Tamura et al. (U.S. Patent 6,751,949).

Re claims 1 and 9, as illustrated in Figures 1, 2, 6(B), 7, 21, and 22, Sasaki disclose a system and a method for assisting the regeneration of depollution means (22a) by oxygen combustion of soot,

wherein the depollution means is associated with oxidation catalyst-forming means (oxygen absorbing and active-oxygen releasing agent (61) (see lines 36-59 of column 5)) implementing an OSC function, constituting a supply of oxygen and integrated in an exhaust line (20) of a motor vehicle diesel engine (1), in which the oxidation catalyst-forming means is located upstream of the depollution means (the oxidation catalyst-forming means is coated on an upstream side of a wall (54) which is a trapping means of soot) in the exhaust line and the engine is associated with common rail means (not shown but obviously must have in order to feed fuel to each fuel injector (6)) for feeding its cylinders with fuel,

wherein the system comprising means (41, 42, 44) for analyzing the running conditions (engine load, engine speed, air flow rate) of the vehicle, for comparing (step 300 or 301) them with predetermined threshold values, and for controlling the engine (i) in a first regeneration operating mode by molecular oxygen combustion of soot with a lean mixture when running conditions are above the threshold values (when the engine is operated in the area B3 (step 301 with YES answer), the engine is in a continuous regeneration mode, a normal lean operating condition of the engine is maintained to regenerate the particulate filter (22a) (see Figure 13(B) and lines 3-48 of column 21), and (ii) in a second regeneration operating mode by oxygen combustion of the soot implementing sequences in which engine operation alternates between stages of rich mixture operation and of lean mixture operation when conditions are below the threshold values (when the engine is operated in the area B2 (step 301 with NO answer), a sub

fuel injection (Q2) is injected in the expansion or exhaust stroke so that reducing agents (unburned fuel from Q2) are oxidized at the oxidation catalyst-forming means to raise a temperature of the particulate filter (22a), the overall engine air-fuel ratio is made rich at regular or irregular intervals (see lines 55-58 of column 27)), so that during a rich mode, oxygen is released from the oxidation catalyst-forming means to promote combustion of reducing agents, so as to raise temperature levels at an inlet to the depollution means (22a) (see at least Figures 3 and line 11 of column 6 to line 49 of column 7).

Sasaki, however, fails to disclose that the means for analyzing the running conditions of the vehicle includes a comparison of temperature level in vehicle exhaust line with a threshold value.

As indicated in the Abstract, Tamura et al. disclose an exhaust emission control device of internal combustion engine for a vehicle, wherein at the start operation of the engine, an exhaust flow is restrained to raise an exhaust gas pressure. As shown in Figure 3 and indicated on line 37 of column 8 to line 25 of column 9, Tamura et al. teach that it is conventional in the art to compare an exhaust gas temperature with a threshold value to determine a running condition of the vehicle. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the teaching by Tamura et al. in the system and method of Sasaki, since the use thereof would have been routinely practiced by those with ordinary skill in the art to accurately determine an operating or running condition of the vehicle.

Re claims 2, 3, 10, and 11, in the modified system and method of Sasaki, the depollution means comprise a particle filter (22a), wherein the particle filter includes a catalyst (noble metal on lines 36-42 of column 5).

Re claims 4 and 12, in the modified system and method of Sasaki, the depollution means comprises a NOx trap (22b).

Re claims 6 and 14, in the modified system and method of Sasaki, the depollution means are impregnated with an SCR formulation (noble metal catalyst on lines 36-42 of column 5), performing a function of oxidizing CO/HC.

Re claims 8 and 16, in the modified system and method of Sasaki, the running conditions are determined from at least one of the load (load sensor (41)) on the engine and its running speed (speed sensor (42)).

Re claims 17 and 18, in the modified system and method of Sasaki, the oxidation catalyst-forming means implementing an OSC function constituting a supply of oxygen stores oxygen in the form of at least one of ceria (CeO_2) and a composite oxide of cerium and zirconium (see lines 50-54 of column 27).

Re claims 21 and 22, in the modified system and method of Sasaki, an outlet of the oxidation catalyst-forming means feeds into an inlet of the depollution device (22a) in the exhaust line (the oxidation catalyst-forming means is coated on an upstream side of a wall (54) of the depollution device (22a)).

5. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki in view of Tamura et al. as applied to claims 1 and 9, respectively, above, and further in view of Rao (U.S. Patent 4,655,037).

The modified system and method of Sasaki disclose the invention as cited above, however, fail to disclose that the fuel includes an additive that is to be deposited together with

the particles with which it is mixed on the depollution means in order to facilitate regeneration thereof.

Rao discloses a carbon ignition temperature depressing agent and a method of regenerating a particle filter utilizing the agent. As indicated on lines 30-42 of column 3 and line 58 of column 3 to line 14 of column 4, Rao teaches that it is conventional in the art to include an additive (metal oxide) in an engine fuel so that the additive is deposited together with the particles with which the addictive is mixed on a particle filter in order to facilitate regeneration thereof by reducing an ignition temperature of the particles. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the additive taught by Rao in the modified system and method of Sasaki, since the use thereof would have been routinely practiced by those with ordinary skill in the art to save fuel or electricity by reducing an ignition temperature of the particles.

6. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki in view of Tamura et al. as applied to claims 1 and 9, respectively, above, and further in view of design choice.

In the modified system and method of Sasaki, in the second regeneration operating mode, the alternating stages of rich mixture operation and of lean mixture operation include at least a first stage of rich mixture operation, followed by a second stage of lean mixture operation, followed by a third stage of rich mixture operation. Sasaki, however, fails to disclose that the rich mixture operation stages have approximately the same duration.

With regard to applicants claim directed to the same duration for the rich mixture operation stages, the specification of such would have been an obvious matter of design choice

well within the level of ordinary skill in the art depending on design variables, such as an operating temperature of the depollution means, a desired duration of the regeneration of the depollution means, etc. Moreover, there is nothing in the record which establishes that the specification of such presents a novel of unexpected result (See *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975)).

Response to Arguments

7. Applicant's arguments with respect to the references applied in the previous Office Action have been fully considered but they are moot in view of the new ground(s) or rejection.

Communication

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tu M. Nguyen/

TMN

Tu M. Nguyen

August 2, 2010

Primary Examiner

Art Unit 3748